

REMARKS

Claim 1 is amended to recite that the detergent composition comprises a stabilizing aid. This amendment to claim 1 is supported in the specification, including at ¶ 0039¹. Claim 1 is also amended to specify that the composition comprises a non-aqueous component and at least 70% of the non-aqueous component comprises a water soluble ionic salt. This amendment to claim 1 is supported in the specification, including at ¶ 0026.

Claim 3 is amended as dependent from claim 2. This amendment to claim 3 is supported in the specification, including at ¶ 0010.

Claim 6 is amended as dependent from claim 2. This amendment to claim 6 is supported in the specification, including at ¶ 0020.

Claim 9, is amended, consistent with claim 1, to recite to the “non-aqueous component”. This amendment to claim 9 is supported in the specification and does not add new matter.

Claim 11 is amended to recite that the hydroxycarboxylate of claim 10 is a citrate salt. This amendment to claim 11 is supported in the specification, including at ¶ 0027.

Claim 14 is amended to clarify that enzyme is present in the gel and enzyme is present in the particles and the ratio of enzyme present in the gel to enzyme present in the particles is between 5:1 and 20:1. This amendment to claim 14 is supported in the specification, including at ¶ 0028.

¹ References to specification are to the published application, US 2005/0245418.

Claim 16 is amended to recite that the stabilizing aid is present in the gel, in lieu of an “enzyme stabilizing aid”. This amendment to claim 16 is supported in the specification, including at ¶ 0041.

Claim 19 is amended as dependent from claim 16. This amendment is supported in the specification including at ¶ 0043.

Claim 20 is amended to recite dependency from claim 2 and to clarify that the particles comprise 40% to 70% stabilizing aid by weight of the particles. This amendment to claim 20 is supported in the specification, including at ¶ 0041.

At pages 2-3 of the Office Action the Examiner rejects claims 1-27 under 35 U.S.C. § 112 (second paragraph). Reconsideration and withdrawal of this rejection is respectfully requested.

The Examiner argues that it is indefinite to have a composition with at least 70% of the remainder of the composition an ionic salt and still have 60% water and other components. The Examiner contends that the claimed percentage ratios exceed 100% and asks the applicants what “remainder” means.

Claim 1 is amended, in pertinent part, to specify that the composition comprises water and a non-aqueous component wherein at least 70% of the non-aqueous component is comprised of a water soluble ionic salt. The compositional percentages of the claimed composition do not exceed 100% in that the claimed composition comprises 5% to 60% water and a non-aqueous component with 70% of the non-aqueous component of the composition comprised of the water soluble ionic salt. Thus, the compositional amounts do not exceed 100%. As amended in this regard, claim 1 is believed to be definite comply with 35 U.S.C. § 112 (second paragraph).

The Examiner asserts that claim 17 recites the limitation “wherein the stabilizing aid is a water miscible organic solvent” and then refers to claims 18 and 19-21 with respect to recited stabilizing aids and requests clarification. Claim 1 is amended to recite that the composition comprises a stabilizing aid and not a stabilizing amount of an organic water-miscible solvent. Claim 16 is amended to recite to the stabilizing aid thus having proper antecedent basis from claim 1. Claim 17, which is dependent from claim 16 recites the embodiment wherein the stabilizing aid is the water-miscible organic solvent. Claim 19 is amended to depend from claim 16 and recites the embodiment of the present invention wherein the stabilizing aid is a soluble calcium salt. Claim 20, as amended, is dependent from claim 2 and thus has antecedent basis with respect to the particles. The embodiment of the invention in claim 21 pertains to the stabilizing aid being sugar or starch. As amended, claims 17-18 pertain to the embodiment wherein the stabilizing aid is a water-miscible organic solvent, claim 18 pertains to an embodiment wherein the stabilizing aid is a soluble calcium salt and claim 21 concerns an embodiment wherein the stabilizing aid is sugar or starch. Thus, these claims properly recite the alternative embodiments of the stabilizing aid. These alternative embodiments are discussed at ¶¶ 0041-0044 of the specification. Claims 17-21, as amended, are believed to be definite comply with 35 U.S.C. § 112 (second paragraph).

The Examiner further asserts that the term “gel enzyme” in claim 14 is indefinite. Claim 14 is amended to specify that the recited ratio pertains to enzyme present in the gel to enzyme present in the particles. As amended, claim 14 is believed to be definite comply with 35 U.S.C. § 112 (second paragraph).

The Examiner rejects claims 6, 9, 11 and 16 based on alleged lack of antecedent basis. Claim 6 is amended to be dependent from claim 2 which provides antecedent basis for the “gel”. Regarding claim 9, claim 1 is amended to recite that the composition comprises a non-aqueous component and claim 9 is amended accordingly. As such, proper antecedent basis exists in claim 1 for the limitations recited in claim 9. Claim 11 is amended to recite that the hydroxycarboxylate is a citrate salt which provides antecedent basis for the limitations. Claim 16 is amended, as discussed above, and there is antecedent basis in claim 1, as amended, for the stabilizing aid. Based on the foregoing, claims 6, 9, 11 and 16, as amended, should find proper antecedent basis in the claims referred to therein and, as such, are believed to be definite comply with 35 U.S.C. § 112 (second paragraph).

The Examiner states that the limitation of claim 20 of “wherein the particles...” lacks antecedent basis in claim 1. Claim 20 is amended as dependent from claim 2 which provides antecedent basis for the particles. The Examiner also requests clarification as to the compositional amounts set forth in the claims. Claim 20 is amended to specify that the particles comprise 40% to 70% stabilizing aid. Claim 20, as amended, is believed to be definite comply with 35 U.S.C. § 112 (second paragraph).

At pages 4-6 of the Office Action, the Examiner rejects claims 1-27 under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,122,159 to Olson *et al.* (“Olson”). Reconsideration and withdrawal of this rejection is respectfully requested.

The Examiner asserts that Olson teaches a boron free, aqueous detergent composition comprising surfactant, cellulose enzyme, water soluble solvent and water soluble alkali metal salt. The Examiner further asserts that Olsen teaches propylene

glycol and one or more builder components selected from alkali metal salts and high molecular electrolytes. Regarding the thickener, the Examiner argues that Olson provides motivation to manufacture the cellulase treatment composition in the form of a thickened liquid or gel since the thickened or gelled compositions tend to maintain the uniformity of the enzyme containing compositions and can assure that the enzyme treatments are uniform and in that Olson provides a list of purported thickeners. The Examiner states referring to the water soluble encapsulating agent that Olson teaches pelletizing the enzyme using known techniques in which an enzyme and binder are compacted under pressure. The Examiner further states that Olsen teaches of enzyme concentrations of at least 1,000 CMC units, the use of cellulase enzyme in laundry or detergent compositions and cellulase enzymes in combination with surfactants. The Examiner acknowledges that Olsen does not teach detergent compositions comprising the claimed water soluble ionic salt ratios, viscosity, migration speed and density. The Examiner, however, asserts that these variables would have been obvious in the art as optimization of variables or under the premise of a reasonable expectation based on alleged similarities of components between the present invention and the disclosure of Olson.

Obviousness analysis involves a determination of the scope and content of the prior art, ascertaining the differences between the prior art and the claimed invention and resolving the level of skill in the art. Olson concerns aqueous processes and compositions for obtaining "stone washed" or "used and abused" look clothing. Olson does not teach of the specific composition of the present invention comprising an enzyme and stabilizing aid having 5 to 60% water and a non-aqueous component wherein at least

70% of the non-aqueous component comprises a water soluble ionic salt, as set forth in the amended claims. Thus, the amounts of water and water soluble ionic salt is one difference between the level of the art as set forth in Olson and the present invention.

Based on the disclosure of Olson, the level of the skill in the art does not rise to the present invention. As discussed in the specification, the high content of ionic salt in the present invention, which is expressed in the claims as non-aqueous component comprising at least 70% water soluble ionic salt, combined with the specific water content set forth in the claims, between 5 and 60%, provides for unexpected enzyme stability. (See, specification at ¶ 0068.) Olson does not disclose that a salt plays a role in enzyme stability but rather describes salts as cellulase activators. (See, Olson at column 8, lines 57-63.) Further, the desired goal of the detergent in Olson is providing a “stone washed” look to fabric and in that regard the ratio of the enzyme in solution to amount of fabric is said in Olson to be important to optimizing the treatment. (See, Olson at column 8, lines 57-63.) Considering the unexpected properties of the present invention relating to enzyme stability arising from the specific combination of the non-aqueous component comprising at least 70% water soluble ionic salt and 5 to 60% water and the lack of any indication in Olson that the water soluble ionic salts may play any role in enzyme stability, the combination of the water soluble ionic salt and water in the amounts set forth in the claims is not within the skill of the art based on Olson. Thus, the present invention is not obvious over Olson.

Moreover, considering the properties provided to the composition based on the claimed amounts of materials particularly the non-aqueous component comprising at least 70% water soluble ionic salt and 5 to 60% water, with the lack of any suggestion in Olson

to modify amounts of water and salt to stabilize the enzymes, the present invention is not a mere optimization of variables and would not be an expected result of any composition disclosed in Olson. As such, the present invention is not obvious over Olson.

Further, considering that the present invention provides unexpected enzyme stability, the combination in the composition of the non-aqueous component comprising at least 70% water soluble ionic salt and 5 to 60% water is not a predictable result of the disclosure of Olson. Particularly, Olson indicates that the ratio of enzyme to fabric optimizes enzyme treatment and that salts may be activators for the cellulase enzyme. Thus, Olson does not establish a level of skill in the art whereby one could, as a design choice, decide to provide the specific combination of a non-aqueous component comprising at least 70% water soluble ionic salt with 5 to 60% water in the composition to stabilize the enzyme and thus one skilled in the art reading Olson would not predictably expect any reasonable success in developing the present invention. Therefore, the present invention comprising a non-aqueous component having at least 70% water soluble ionic salt and 5 to 60% water, which was found to provide enzyme stability, would not have been a predictable result from the disclosure of Olson or the use of a known technique or device of Olson to achieve predictable results. As such, the present invention is not obvious over Olson.

At pages 7-8 of the Office Action, the Examiner rejects claims 1-27 under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,395,701 to Connor *et al.* ("Connor"). Reconsideration and withdrawal of this rejection is respectfully requested.

The Examiner asserts that Connor illustrates a liquid laundry detergent composition comprising water, 0-5% PAA thickener, 0-5% protease, cellulase and

amylase enzymes, 0-2% solvent and 20-30% carbonate salts. Regarding citrate salts, the Examiner asserts that Conner provides motivation to include citric acid and soluble salts as carboxylate builders in detergents due to availability from renewable resources and biodegradability. Regarding ionic salts, the Examiner asserts that Connor teaches optimizing the amount of phosphates and polyphosphates. The Examiner also argues that Connor teaches water soluble solvents and thickeners. The Examiner acknowledges that Connor does not teach 70% ionic salt, viscosity, migration speed and density as recited in the claims. The Examiner, however, asserts that these variables would have been obvious in the art as optimization of variables or under the premise of a reasonable expectation based on alleged similarities of components between the present invention and the disclosure of Connor.

As discussed above, obviousness analysis involves a determination of the scope and content of the prior art, ascertaining the differences between the prior art and the claimed invention and resolving the level of skill in the art. Connor concerns fatty acids and surfactant systems that may be used in detergent compositions. Connor does not disclose the specific components of the present invention, particularly the combination of non-aqueous component having at least 70% water soluble ionic salt in a composition comprising 5 to 60% water. This specific combination in the respective amounts of the water soluble ionic salt and water set forth in the claims unexpectedly provides the present invention with enzyme stability. (*See*, specification at ¶ 0068.) Connor discusses various amounts of builders in its composition and addresses builder to surfactant ratios (*see*, Connor at column 61, line 55 to column 62, line 40) but does not address adjusting ratios of water soluble ionic salt content and water in composition, and significantly, does

not suggest adjusting the amounts of such components for enzyme stability. The difference between the state of the art developed by Olson and the present invention, in part, pertains to the amount of water soluble ionic salt in combination with the amount of water that is set forth in the claims of the instant application. Considering the unexpected properties discovered with the combination of non-aqueous component having at least 70% water soluble ionic salt in a composition comprising 5 to 60% water and the mere mention of such materials in Connor without any disclosure of the precise amounts as set forth in the amended claims combined with the lack of disclosure of adjusting the relative amounts of such ingredients to bring about the unexpected properties relating to enzyme stability, the level of the skill of the art based on the disclosure of Connor falls well short of the present invention. Thus, the present invention is not obvious over Connor.

Further, considering the combination of materials in the amounts set forth in the claims, the lack of specific disclosure of the compositional amounts of the materials set forth in the claims and that Connor fails to provide any indication that the combination of a non-aqueous component having at least 70% water soluble ionic salt in a composition comprising 5 to 60% water, the present invention cannot be seen as a mere optimization of variables or an expected result from the disclosure of Connor. Therefore, the present invention is not obvious over Connor.

Also, considering that the present invention provides unexpected enzyme stability, the combination of the non-aqueous component comprising at least 70% water soluble ionic salt and 5 to 60% water in the composition is not a predictable result from the disclosure of Connor. Connor, considering its lack of disclosure of modifying variables to achieve enzyme stability, does not establish a level of skill in the art whereby

one could, as a design choice, decide to provide the specific combination of a non-aqueous components comprising at least 70% water soluble ionic salt and 5 to 60% water in the composition to stabilize the enzyme. Thus, one skilled in the art reading Connor would not predictably expect any reasonable expectation of success in the developing the present invention. The present invention comprising a non-aqueous component having at least 70% water soluble ionic salt and 5 to 60% water, which was found to provide enzyme stability, would not have been a predictable result from Connor or the use of a known technique or device of Connor to achieve predictable results. As such, the present invention is not obvious over Connor.

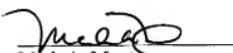
Conclusion

The instant application is believed to be in condition for allowance. A Notice of Allowance of Claims 1-27 is respectfully requested. The Examiner is invited to telephone the undersigned at (908) 722-0700 if it is believed that further discussions, and/or additional amendment would help advance the prosecution of the instant application.

If any additional extension of time is required, Applicants request that this be considered a petition therefor. Please charge any required petition fee to the Deposit Account No. 14-1263.

Please charge any insufficiency of fees, or credit any excess, to the Deposit
Account No. 14-1263.

Respectfully submitted,



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